NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

FISHPOND MANAGEMENT

(Acre)

CODE 399

DEFINITION

Managing impounded aquatic habitat and water quality for the production of fish.

PURPOSE

- To provide favorable habitat for fish and other aquatic organisms which help sustain the fish population.
- To develop and maintain a desired species composition and ratio.
- To develop and maintain a desired level of production.

CONDITIONS WHERE PRACTICE APPLIES

In warm and cold water ponds, lakes, and reservoirs not managed for commercial aquaculture purposes.

CRITERIA

General Criteria Applicable to All Purposes

Ponds must meet the requirements of Conservation Practice Standard 378, Pond.

Livestock shall be excluded from the pond.

Control nuisance species in compliance with state and local regulations.

Protect the site from flooding, sedimentation, and contamination.

Control undesirable aquatic vegetation.

Comply with state and local regulations when selecting species to be stocked.

Discharges from ponds, lakes, and reservoirs will meet state water quality standards.

Prevent the fish in the pond from escaping or being introduced into adjoining waters where native species might be adversely affected in accordance with state and local regulations.

New or existing structures will meet or exceed the requirements for Oklahoma NRCS Pond (378) or Dam (349) standards.

All Federal, State and local regulations will be followed and necessary permits obtained prior to constructing, stocking, etc.

Locate new ponds in areas that will have good water quality with minimum sedimentation and no contamination problems.

Ponds suitable for proper management will be at least one-half surface acre in size.

Provide some relatively deep water (at least 10 feet in depth) in order to minimize impacts from freezing, evaporation and to provide more diverse habitat.

Install drainpipe in order to drawdown water for management purposes.

Install structures such as brush piles, concrete blocks, tile pipe, wooden pallets, and tire bundles for fish, and other aquatic organisms if adequate natural structure and submerged habitat is not available,.

Avoid stocking with fish species that are invasive or may become invasive in surrounding waters.

Maintain 10 to 25 percent surface area coverage of desirable aquatic vegetation for fish, amphibian, and invertebrate habitat.

Treat excessively turbid or muddy water by controlling erosion on the drainage area or treating water with gypsum, alum, or organic matter to clear the water.

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Criteria to Develop and Maintain a Desired Species Composition and Ratio

Limit species for stocking to those that are locally adapted for use in ponds, lakes, or reservoirs within Oklahoma.

Based on client objectives and local regulations develop a pond management plan that specifies species selection, stocking rates, and ratios.

Develop species selection, stocking rates, and ratios with respect to the size, depth, water temperature, and water quality of the pond to be stocked.

Avoid stocking ponds with fish from other streams, lakes, or ponds. Such stocking methods increase the chances for introducing undesirable species or diseases.

Stocking rates shall follow the recommendations of the Oklahoma Department of Wildlife Conservation (ODWC) or NRCS biologist.

General stocking rates for typical recreational fishing in Oklahoma are as follows:

- Stock 500 bluegill fingerlings per surface acre in the fall.
- Stock 100 channel catfish fingerlings per surface acre in the fall.
- Stock 100 bass fingerlings per surface acre the following spring.

Other stocking rates, fish species, and combinations may be appropriate depending on the size, depth, water temperature, and water quality of the area to be stocked.

Consult with ODWC or NRCS biologists for alternative species and stocking rates.

To maintain the desired species composition and species ratios a plan will be developed with the client to evaluate future species composition and species ratios through observations, seining and catch records.

Harvest fish after initial stocking using the following general guidelines for maintaining ratios in recreational ponds.

- Do not remove any largemouth bass until third year following stocking. Catch and release only before third year.
- After third year, do not remove more than 20 bass per year.
- Bluegill may be removed during first summer after stocking.
- Remove 8 to 10 pounds of bluegill for every one pound of largemouth bass removed from the pond.
- Catfish may be removed during second year after stocking.
- Do not remove more than 10 catfish per year.

Different ratios, harvest rates, and population numbers can be planned where the client is interested in managing for trophy bass, large bluegill, catfish or other special management objectives. Consult with ODWC or NRCS biologists for alternative harvest and population management recommendations

Maintain written records of number of fish that are harvested by species from the pond.

Periodically seine the pond to determine species composition, relative population numbers, and general health and condition of fish.

Adjust harvest numbers based on results of all available information.

Renovate pond to remove all fish and restock if desired species or population balance cannot be corrected through proper management.

Criteria to Obtain and Maintain a Desired Level of Production

Maintain the desired level of production through liming, fertilization, slot limits, harvesting, or supplemental feeding.

Address water quality conditions (e.g., dissolved oxygen level, total hardness, ph, alkalinity, phytoplankton bloom) based on local conditions using the pond management plan.

Aquatic organism health issues directly affect production levels and need to be included in the pond management plan. Follow proper diagnostic sampling procedures during fish kills and when submitting samples to diagnostic labs.

CONSIDERATIONS

Use native fish species whenever possible. Nonnative game fish can escape ponds and severely affect adjacent ecosystems.

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Consider alternatives to the use of pesticides, herbicides, or chemicals in the drainage area above the site, which may have negative impacts to water quality, fish and other aquatic organisms.

Consider the use of nutrient and pest management practices in the watershed to maintain water quality.

Consider the effect of additional uses (e.g. livestock watering, recreation, irrigation) on the fish and/or aquatic organism population.

Consider the use of supplemental aeration equipment to improve gas transfer, water quality, and minimize fish stress caused by low dissolved oxygen levels with in impoundment.

Consider establishing the drainage area of the pond in permanent vegetation in order to improve water quality and reduce sediment.

Consider the use of filter strips or other practices to ensure that discharges from ponds, lakes, and reservoirs will meet state water quality standards.

Consider methods to prevent the fish in the pond, lake, and reservoir from escaping into adjoining waters.

Consider maintaining shoreline on a 3 to 1 slope in order to reduce aquatic weed growth and maintain stable habitat for spawning fish.

Consider methods to prevent introduction of non-native species into adjoining waters where native species might be adversely affected or non-compatible species from entering the pond, lake or reservoir.

Consider using only species of fish or aquatic organisms that are specifically adapted to impounded waters.

Consider excluding livestock from the pond and creating a buffer by fencing the pond and installing a freeze proof tank as an alternative livestock watering facility.

PLANS AND SPECIFICATIONS

A pond management plan will be prepared for each site using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other documentation.

The plan will include:

- Location map and plan view of the site.
- Statement of purpose that describes the desired species and management goals.
- Evaluation methods such as observation, seining, electroshocking, and harvest records.
- Any requirements for permits or other regulatory requirements.

OPERATION AND MAINTENANCE

Requirements for the operation and maintenance of this practice shall be incorporated into site specifications.

The client will receive a plan or specifications describing the management and corrective actions that are required for the successful management of the pond, lake or reservoir.

Operation and maintenance items to be included in the plan as necessary include the following:

- Pond construction techniques to improve habitat and reduce aquatic weed problems
- Recommended fish species and stocking rates
- Fish harvest and management guidelines.
- Supplemental feeding.
- Removing undesirable and/or overpopulated species.
- Aquatic plant control.
- Fertilizing.
- Treating turbidity and muddy water
- Techniques for adding fish structures for habitat improvement

REFERENCES

Oklahoma Department of Wildlife Conservation. 1995. “Managing Pond Fisheries in Oklahoma”,

“Farm Pond Ecosystems”, NRCS Fish and Wildlife Habitat Management Leaflet, Number 29, February, 2006.

Amphibians and Reptiles. NRCS Fish and Wildlife Habitat Management Leaflet Number 35, May 2006